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PREVALENCE AND PREDICTORS OF ANGIOGRAPHIC STENT FRACTURE AND STENT FRACTURE WITH RESTENOSIS AFTER BARE METAL AND DRUG-ELUTING STENT IMPLANTATION

i2 Poster Contributions
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Background: There were some reports of the predictors and prevalance of stent fracture (SF) and SF with restenosis after bare metal stent (BMS) and drug-eluting stent (DES) implantation. However, there is no systematic evaluation in real-world PCI.

Methods: From September 2001 to December 2009, 10 types of stent with 5 platforms: BMS, 1589; Bx Velocity stent, 227; Express2 stent, 145; Liberte stent, 192; Driver stent, 902; S-stent, 123; DES, 6902; Cypher Bx stent (SES), 5184; Taxus Express2 stent, 815; Taxus Liberte stent, 347; Endeavor stent, 352; and Biomatrix stent, 204 were implanted and follow-up angiography was performed at 6 to 8 months after implantation. The follow-up rate was 81.2%.

Stent fracture was defined as apparent separation of stent strut by angiography.

Results: The prevalence of SF after BMS implantation was 0.9%: Bx Velocity stent, 2.2%; Express2 stent, 0%; Liberte stent, 0.5%; Driver stent, 0.9%; and S-stent, 0.8% and that after DES was 4.9%: SES, 5.7%; Taxus Express2 stent, 3.2%; Taxus Liberte stent, 1.4%; Endeavor stent, 2.3%; and Biomatrix stent, 2.9%.

The restenosis rate of SF after BMS implantation was 66.6% (10/15), and that after DES was 26.0% (88/338, p=0.002). Multivariate analysis demonstrated that the predictors of SF were RCA (odds [95%CI], 2.48 [1.93 to 3.20], p<0.0001), SES implantation(4.06 [3.04 to 5.50] ,p<0.0001), 3 or more stents (3.16 [2.08 to 4.72] ,p<0.0001), CTO lesion (2.22 [1.65 to 2.93], p<0.0001), ostial lesion (2.94 [2.20 to 3.91], p<0.0001), and angulated lesion (3.22 [2.45 to 4.19], p<0.0001).

The predictors of restenosis in SF lesion were BMS implantation (7.24 [2.39 to 24.6], p=0.0007) and restenosis lesion (2.91 [1.50 to 5.60], p=0.0014).

Conclusions: The prevalence of SF after DES implantation was higher than that of BMS, mainly due to the high prevalence of SF after SES implantation. However, BMS implantation was a predictor of restenosis in the SF lesion.